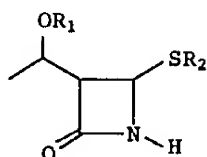
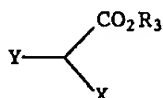


[Abstract]

An azetidinone derivative represented by the general formula (1):



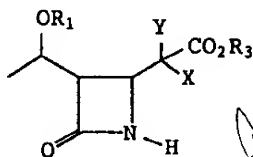
(wherein OR₁ is a protected hydroxyl group; R₂ is a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkenyl group or a substituted or unsubstituted aromatic group) is reacted with an ester compound represented by the general formula (2):



[2]

(wherein CO₂R₃ is an esterified carboxyl group; X and Y are the same or different and represent individually a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkenyl group, a substituted or unsubstituted aralkyl group, a substituted or unsubstituted aryl group, a substituted or unsubstituted alkylthio group, a substituted or unsubstituted alkenylthio group, a substituted or unsubstituted aralkylthio group, a substituted or unsubstituted arylthio group, a substituted or unsubstituted alkyloxy group, a substituted or unsubstituted alkenyloxy group, a substituted or unsubstituted aralkyloxy group, a substituted or unsubstituted aryloxy group, a substituted or unsubstituted silyloxy group, a substituted or unsubstituted heterocyclic group, a substituted or unsubstituted heterocyclic-thio group, a substituted or unsubstituted heterocyclic-oxy group, a substituted or unsubstituted acyl group, a substituted or unsubstituted ester group, a

substituted or unsubstituted thio ester group, a substituted or unsubstituted amide group, a substituted or unsubstituted amino group, a hydrogen atom or halogen atom, or are taken together with each other to form a substituted or unsubstituted cycloalkan-2-on-1-yl group) in the presence of zinc and copper compounds to synthesize a 4-substituted azetidinone derivative represented by the ~~general~~ formula



(wherein OR₁, CO₂R₃, X and Y are as defined above).